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(54) Multi-deck sieving machine with deck selector facility

(57) A multi-deck vibratory type sieving machine for sieving a range of sizes of granular material has a vibratory body 10 provided with two or more mesh sieve decks 11, 12, 13 each of different size mesh aperture, arranged one above another in order of mesh aperture size with the smaller aperture sizes positioned uppermost. The granular material to be sieved is guided directly onto the selected sieve deck from inlet chute 24 via ducts 14 - 16 and diverted valves 21, 22. A vibratory drive mechanism 17 vibrates the vibratory body and sieve decks to effect the sieving process. Particles which do not pass through the selected sieve deck are discharged at outlet 25. Particles which pass through the selected sieve deck and any lower deck are discharged at outlet 26. Manual deck removal and replacement is obviated because a change of sieve deck is achieved by selection within the machine.

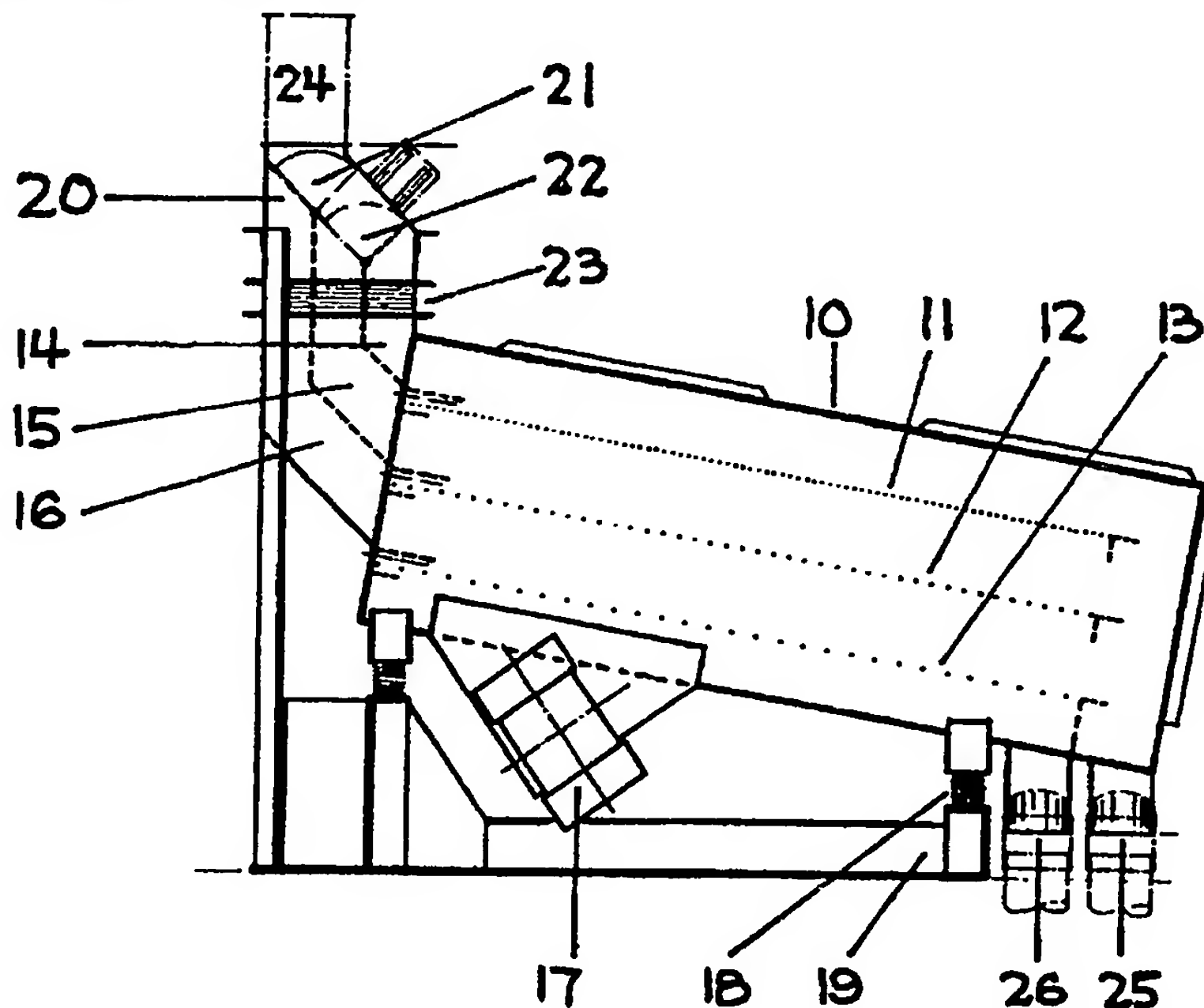


Fig 1

MULTI-DECK SIEVING MACHING WITH
DECK SELECTOR FACILITY

This invention relates to a vibratory type sieving machine.

Sieving machines are well known which are used to separate granular materials into size ranges. Such sieving machines comprise a vibratory body which is fitted with a sieving surface such as a wire mesh deck. Granular material placed on the mesh deck is separated into size ranges by either passing or not passing through the mesh.

Where a different size range of the granular material is required the mesh deck must be removed from the vibratory body and replaced with a mesh deck having a different aperture size.

According to the present invention there is provided a sieving machine which comprises a vibratory body which is fitted with two or more mesh decks arranged one above another with the smaller aperture meshes positioned uppermost and the means of guiding the granular material which is to be sieved directly onto the appropriate mesh deck.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawings in which:-

Figure 1 shows an elevation of the sieving machine;

Figure 2 shows a cross section through the vibratory body;

Referring to the drawings the sieving machine comprises a vibratory body 10 in the form of an open box with mesh decks 11, 12 and 13 fitted into the vibratory body. Mesh deck 12 has larger apertures than 11 and mesh deck 13 has larger apertures than 12. Guide ducts 14, 15 and 16 are rigidly mounted on the vibratory body and a vibratory drive 17 causes the vibratory body, mesh decks and guide ducts to vibrate. Isolation springs 18 support the vibratory parts on the static support frame 19.

Inlet chute 20 has hinged diverter valves 21, 22 and the flexible connection 23 connects the static inlet chute to the vibrating guide ducts.

Granular material to be sieved is fed into the inlet chute at 24. By suitably arranging the settings of the diverter valves the granular material will be guided onto the appropriate mesh deck. Particles larger than the mesh aperture size will be vibrated along the mesh deck to discharge through outlet 25. Particles smaller than the mesh aperture size will pass through the mesh deck and any lower deck and will be vibrated along the vibratory body bottom to discharge through outlet 26.

CLAIMS

- 1 A vibratory type sieving machine for sieving granular material, comprising a vibratory body provided with two or more mesh type sieve decks, each deck having a different size mesh aperture, arranged one above another in order of mesh aperture size with the smaller aperture meshes positioned uppermost, having the means for guiding the granular material to be sieved directly onto any of the sieve decks selected to perform the sieving process, and having a vibratory drive mechanism to vibrate the vibratory body and sieve decks to effect the sieving process.
- 2 A vibratory type sieving machine as claimed in Claim 1 wherein the vibratory body is subdivided and each subdivision is provided with two or more mesh type sieving decks.
- 3 A vibratory type sieving machine as claimed in Claim 1 or Claim 2 wherein all particles which do not pass through the selected sieve deck are discharged through a common discharge outlet and all particles which pass through the selected sieve deck are discharged through another common discharge outlet.
- 4 A vibratory type sieving machine as claimed in Claim 1 or Claim 2 wherein the means for guiding the granular material to be sieved directly onto the selected sieve deck is in the form of hinged diverter valves within guide ducts.
- 5 A vibratory type sieving machine as claimed in Claim 1 or Claim 2 wherein the sieve decks are of a perforated plate type.
- 6 A vibratory type sieving machine as claimed in Claim 1 or Claim 2 wherein the vibratory drive mechanism is one or more vibrator motors.
- 7 A vibratory type sieving machine substantially as described herein with reference to Figures 1 and 2 of the accompanying drawing.

Patents Act 1977**Examiner's report to the Comptroller under Section 17
(The Search report)**Application number
GB 9306094.5**Relevant Technical Fields**

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Search Examiner
G J W RUSSELLDate of completion of Search
8 JUNE 1994**Databases (see below)**

(i) UK Patent Office collections of GB, EP, WO and US patent specifications.

(ii)

Documents considered relevant
following a search in respect of
Claims :-
1-7**Categories of documents****X:** Document indicating lack of novelty or of inventive step.**Y:** Document indicating lack of inventive step if combined with one or more other documents of the same category.**A:** Document indicating technological background and/or state of the art.**P:** Document published on or after the declared priority date but before the filing date of the present application..**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.**&:** Member of the same patent family; corresponding document.

Category	Identity of document and relevant passages	Relevant to claim(s)
	NONE	

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